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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tetsuo Take

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/705,506	Applicant(s) TAKE, TETSUO	
	Examiner JULIAN MERCADO	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 12-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 16, 2009 has been entered.

Claims 1-6 and 12-35 are pending.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Applicant is also asked to provide page and line citations to the original disclosure in support of any amendments to the present claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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Claims 1, 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a second fuel cell stack, i.e. a second power generating means to recycle unreacted hydrogen, does not reasonably provide enablement for this recycling to be between a first power generating means or fuel cell stack and a second power generating means, i.e. a second fuel cell stack. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The examiner maintains that Figure 3 shows the anode exhaust gas 72 being recycled back via inlet 65 to the same anode *within the same power generating means*, and that there is no recycling either shown or disclosed between the first and second fuel cell stack/power generating means.

Applicant's remarks that claims 1 and 4-6 have been amended to clarify the pathway for supplying the exhaust between the first and second power generating means are noted. This amendment, however, only obviates the 35 U.S.C. 112, second paragraph rejection for lack of antecedent basis for the previously claimed first and second fuel cells (now claimed as respective power generating means). The citation of Figure 1 is noted but to what extent Figure 1 and items 25 and 27 may obviate the enablement issues is not clear, since Figure 1 is a "Prior Art" configuration, and items 25 and 27 are conduits related to the converting and oxidizing means and not discrete parts of a power generating means. Applicant is also asked to provide page and line citations to the original disclosure (totaling 133 pages) in order to more clearly set forth the basis for obviating the present enablement issues.

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The rejection of claims 1, 4-6, 12-15 and 24-35 under 35 U.S.C. 112, second paragraph for the reasons set forth in the prior Office action has been withdrawn.

(new rejection)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said reformed gas supplied" in line 10 and line 11 (both instances). There is insufficient antecedent basis for this limitation in the claim. It appears to the examiner that "said reformed gas supplied" should be changed to --said reformed gas produced--. Alternatively, a positive recitation of supplying the produced reformed gas prior to the limitation "said reformed gas supplied" would obviate this ground of rejection.

Claims 1, 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a positive recitation of a flow control valve for the amount of supplied gas and a flow control valve for the amount of supplied air which affects the presently claimed amount of waste heat being controlled, and the associated structural cooperative relationship therewith.

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Claims 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, second paragraph as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu (U.S. Pat. 6,551,732 B1) in view of Morimoto et al. (U.S. Pat. 5,221,586).

This rejection is maintained for the reasons of record. The examiner notes the amendment to the present claims now reciting that an amount of said waste heat being controlled so as to be reduced if an amount of said reformed gas supplied increases and so as to be increased if the amount of said reformed gas supplied decreases. Notwithstanding the 35 U.S.C. 112, second paragraph rejection (discussion above), this limitation has not been given patentable weight as it is drawn to a process-of-using feature which does not give breadth or structural scope to the claimed fuel cell power generating system. The examiner maintains that the fuel cell system has a waste heat, i.e. " part of the waste heat in the fuel cell can be recovered in the form of water vapor for use in fuel cell processing. See col. 3 line 56 et seq.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and to the extent that applicant's claimed invention may be further amended. U.S. Pat. 5,961,928 to Maston et al. teaches a control strategy for a fuel cell system wherein the

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temperature of a reformer as a main parameter is maintained at a fixed level by use of a control algorithm based on a temperature T and the degree of opening of valves [42a] and [67a]. See col. 6 line 1 et seq.

Claims 3 and 6 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. as applied to claims 1, 2, 4, 5, 7 and 8 above, and further in view of Gagnon (U.S. Pat. 4,098,960).

Claims 12-19 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. as applied to claims 1, 2, 4, 5, 7 and 8 above, and further in view of Scheffler et al. (U.S. Pat. 4,859,545).

Claims 20, 21-23 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. and Gagnon as applied to claims 3, 6 and 9 above, and further in view of Scheffler et al. (U.S. Pat. 4,859,545).

The rejections when further in view of Gagnon and Scheffler et al. are maintained for the reasons of record. It is noted that arguments submitted for the tertiary references merely assert that these references fail to remedy alleged differences in Morimoto et al. from the claimed invention, herein maintained for the reasons set forth *supra*.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/Julian Mercado/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795